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ABSTRACT

This 9-week curriculum unit on trees is designed for gifted students in grades 1-5. The lessons are designed for 40-minute classes meeting two or three times a week and stress the development of creative thinking skills, creative problem solving and decision making skills, and critical and logical thinking skills. Each of the 12 lesson plans includes a title, a list of materials needed, suggested activities, and possible extended activities. Sample activities include: studying one square foot of yard, taking a walk blindfolded, going on a nature treasure hunt, adopting a tree and recording changes over a year, comparing two adopted trees, identifying patterns in nature, creating a piece of art using only natural products, and making musical instruments using natural items. (DB)

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A WALK ON THE WILD SIDE

ADVENTURES WITH PROJECT LEARNING TREE

A Gifted Science Unit for

Grades 1-5

Libertyville School District 70
Libertyville, Illinois 60048

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This nine week unit is designed for gifted students in grades 1-5. Lessons are designed for forty-minute classes, which meet two to three times per week. Many of the activities have been adapted from the Project Learning Tree Activity Guide K-6, which was published by The American Forest Council (1988), 1250 Connecticut Avenue, N.W., Washington, D.C. 20036.

INTRODUCTION

This unit was designed to provide curriculum for identified gifted students in grades 1-5. The activities can be adapted for each grade level.

In order to challenge the gifted student, the following skills have been incorporated into this unit:

I. Creative Thinking Skills
   - A. Fluency
   - B. Flexibility
   - C. Originality
   - D. Elaboration
   - E. Guided Imagery

II. Creative Problem Solving and Decision-Making Skills
   - A. Creative Problem Solving
   - B. Future Problem Solving

III. Critical and Logical Thinking Skills
   - A. Analogies and Syllogisms
   - B. Deductive Reasoning
   - C. Interpreting/Inferring
   - D. Patterns/Figural Relationships
   - E. Classifying
   - F. Hypothesizing

STUDENT CONTRACT FOR PROJECT LEARNING TREE

ENRICHMENT UNIT

A WALK ON THE WILD SIDE

NAME: _____

DATE: _____

I agree to participate fully in all activities and assignments, as well as any homework projects that are included in this unit.

I am interested in learning these two things about the natural things around me: (plants, trees, habitats, etc.)

1. _____

_____

2. _____

_____

STUDENT SIGNATURE: _____

PARENT SIGNATURE: _____

ENRICHMENT TEACHER'S SIGNATURE: _____

LESSON ONE: SQUARE FOOT FIELD TRIP

MATERIALS NEEDED: 4 pencils or popsicle sticks per child
1 ruler for each child
string
pencil and paper for each child
something to write on for each child

ACTIVITIES:

1. Inform students they will be taking a one square foot field trip on the school grounds.
2. Ask students to predict what they expect to find in their square. Have them record the number of each item that might appear in their square. (example: 20 blades grass, 1 ant, 2 stones, etc.)
3. Distribute paper, pencils, rulers, string, pencils, or popsicle sticks. (Students should bring something to write on.)
4. Have students choose a location on school grounds. Students should use rulers to measure, so that pencils are placed 1 foot apart, in a one foot square. Connect the pencils with string.
5. Students will record the number and type of each item that ppears within their square foot. Students can diagram individual plots.
6. Upon returning to the classroom, students can share items within their square foot and record answers on the chalkboard, overhead, or on a chart. A bar or line graph can be constructed, indicating class results.

EXTENDED ACTIVITY:

Students can write stories about what life would be like living in the square foot they visited. (From the point of view of an ant, blade of grass, stone, insect, etc.)

LESSON 2: BLINDFOLD SAFARI

MATERIALS: . Blindfolds-enough for half of the students
. Pencil
. Paper
. clipboard or something to write on

ACTIVITIES:

1. Instruct students that they will be going on a Blindfold Safari and have them get into pairs, with one at a time being blindfolded.
2. Before going on to school grounds, encourage students to lead blindfolded partners to a variety of trees, bushes, plant life, and allow them to touch, smell, and listen, to what is around them. Switch partners.
3. Have each student try to find what they had explored, without the blindfold. (Partners can assist)
4. Take turns being blindfolded again. Have students try and find (while blindfolded) the fuzziest leaves, roughest bark, nicest smelling area, softest texture, etc.
5. Students will record their experiences by writing a poem with their partner.

LESSON 3: NATURE HIKE TREASURE HUNT

MATERIALS: .Nature Hike Treasure Hunt worksheet
.One paper sack per student
.One pencil per person
.Clipboard or something to write on

ACTIVITIES:

1. Distribute worksheets to students and have class form groups of 3-4.
2. Instruct groups to share jobs for finding items on the Treasure Hunt.
3. Distribute bags to students before going out on school grounds.
4. After students have collected as many items as possible within a given time, have them return inside to discuss and share the items they have found.

EXTENDED ACTIVITY:

Students can create a work of art using the materials they found.

LESSON 4: ADOPT A TREE

MATERIALS NEEDED: .Paper and pencil for each student
.THE GIVING TREE by Shel Silverstein
.Adopt a Tree Worksheet (one per student)

ACTIVITIES:

1. Teacher reads THE GIVING TREE by Shel Silverstein to the class. Discuss the implications and meaning of the story.
2. Tell students that they will adopt their own tree for the school year.
3. Distribute worksheets and tell students that they will be completing the worksheet to learn about their tree.
4. Each student will choose a tree, recording their observations on the worksheet.
5. Students will be given time to sketch their tree.

LESSON 5: COMPARE A TREE

MATERIALS NEEDED: .Worksheets and sketches from previous session.
.Compare a Tree Worksheet and pencil (one per student)

ACTIVITIES:

1. Students will choose a partner to share their tree. (It must be someone whose tree is different from theirs)
2. Have students share their sketches and worksheets from Session 4.
3. Distribute Compare a Tree Worksheets and have students work in pairs to complete them.
4. Share results with the class.

EXTENDED ACTIVITIES:

.Students can graph the results of their findings.
.Record descriptive words and phrases students used. Create poems about the trees using the words.
.Students can use charcoal or crayon to make bark rubbings of their trees. Mount on construction paper.
.After making bark rubbings, have students make rubbings of various textures in the classroom. (walls, desk tops, books, carpet, etc.) Compare these with the bark rubbings.

ADOPT A TREE

NAME:

DATE:

Find a tree in the schoolyard that you would like to adopt for the year. Complete the following to help you learn about your tree.

1. Describe the tree as it is, right now, today.

2. Look at its physical characteristics and describe:

SIZE:

LEAF SHAPE:

LEAF TEXTURE:

LEAF COLOR:

BARK COLOR:

BARK TEXTURE:

BARK APPEARANCE:

BARK THICKNESS:

DO THE CRACKS ON THE BARK RUN
UP AND DOWN, OR SIDEWAYS?

ADDITIONAL CHARACTERISTICS:
(seeds, cones, fruit, etc.)

3. How can you tell if your tree is alive or not?

4. How can you tell if your tree is asleep (dormant) or awake?

5. Describe the sounds your tree makes:

6. Smell to find out whether your tree has an ordor and describe it:

7. Describe how the odor changes with different parts of your tree:

8. How might your tree smell during:

Summer-

Winter-

Spring-

Fall-

9. Tell how you think the tree got here.

10. How could other trees come to join it.

11. What other living things might need this tree for survival.

12. How old do you think the tree is? How can you tell?

How long do you think the tree will live?

13. About how tall is your tree?

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LESSON 5: WHOSE TREE IS THIS?

MATERIALS:
- Return to adopted trees from previous unit
- Large piece constuction paper (one per child)
- Markers and/or crayons and pencils
- Clipboard or something to write on
- String - 12 feet per student
- 4 pencils or popsicle sticks per child
- Lined paper (one piece per child)
- Magnifying glass (one per child)
- Binoculars (optional)

ACTIVITIES:

1. Instruct students to return to the tree they have adopted to search for evidence of animal inhabitance. (insects, birds, small mammals)
2. Have students predict which animals they will find. Then discussion can follow regarding how animals can effect (help or harm) the tree they inhabit.
3. Students can write their predictions on a sheet of lined paper.
4. Encourage students to use the magnifying glass to help discover the animal life that inhabits their tree.
5. Students can use their construction paper to draw the animals they find that inhabit their tree. After finding each species, they can tally the number present.

ex:

SPECIES	NUMBER
	𝍸 𝍸 𝍸 𝍸

6. Allow students to use their string and popsicle sticks or pencils to create a boundary line around their tree. (The line should be no more than 2-3 feet from the base of the tree.)
7. Provide time for students to draw and tally the species present. Remind students to search behind the bark (without removing bark or altering the tree) and to observe possible habitats in high branches.
8. Share individual graphs and findings.

EXTENDED ACTIVITIES:

Have students compile all of their information to create one class graph. The following discussion questions might be useful.

a. What influence does the shade have on the number of insects or animals found?

b. Do insects appear to prefer to work in the shade or the sun or do they have no preference?

c. What influence does the shade have on the activity of insects observed? Would you say they are more active, less active, or about the same in the shade as in the sun?

Write a dairy of a week in the life of one of the animals that inhabited an observed tree.

Write a story about what it would be like to spend a day as an animal in an observed tree.

Write a story from the tree's point of view about what it is like to be the home of many animals.

Do the above lesson with a dead tree and discuss the similarities and differences in the findings. Possible discussion questions:

a. Are live trees used by different animals than those which use dead trees. Give examples.

b. Which animals prefer live trees to dead trees?

c. What value might dead trees have in a forest?

d. How are dead trees similar to live trees?

e. How are dead trees like live trees?

COMPARE A TREE WORKSHEET NAME:

DATE:

Find a classmate who chose a tree different from yours. Work together to fill in the following chart.

	TREE 1	TREE 2
1. Description of Tree		
2. Height of Tree		
3. Leaf Shape		
4. Leaf Size		
5. Leaf Color		
6. Leaf Texture		
7. Bark Texture		
8. Bark Color		
9. Bark Thickness		
10. Bark Appearance		
11. Bark-Direction of Cracks		
12. Unusual Characteristics		

13. Tree Sounds

14. Tree Smells

15. How tree got where it is

16. Other living things that need this tree

17. Age of tree

18. How long you think the tree will live

LESSON 6: STORIES ABOUT TREES

MATERIALS: .One or more of the following books: The Giving Tree, by Shel Silverstein; The Wump World, by Bill Peet; The Lorax, by Dr. Suess; to name a few.
. Paper and pencil
. Art materials for illustrating stories

ACTIVITIES:

1. Read one of the above stories, or another book about trees.
2. Allow time for class discussion.
3. Suggestions for the above stories:
   a. Discuss man's relationship to his environment.
   b. Have students generate a list of things that trees give to us.
   c. Have students brainstorm how man can abuse trees.
   d. Have each student list ways that they can help a tree. Have students write stories, with illustrations, about the ways they can help trees.
   e. Students can write poems or songs about trees and how they help humans and animals.
   f. Discuss what life would be like without trees. Have students write stories about life in a world without trees.
   g. Have students design a tree of the future, to accomdate both man and animal. Have them write a story about their trees.
   h. Discuss what living in a tree would be like. Have students design their own personal tree house and have them write a story about live in a tree.

LESSON 7: PATTERNS IN NATURE

MATERIALS: .Tesselation patterns
. pencil and paper (enough for each child)
. crayons or colored pencils (enough for each child)
. clipboard, or something to write on (for each child)
. Pattern blocks, attribute blocks, tiles, geoboards, tangrams, graph paper

ACTIVITIES:

1. Take students for a nature wood on school grounds, a wooded area, or a field.
2. Use the pencil, paper and crayons to record **patterns** in colors, arrangements, and designs of objects they observe.
3. Investigate and compare these recorded observations and look for **repetition** in nature.
4. Discuss the following:
   a. Why might these colors, arrangements and designs be repeated?
   b. Are they of any value to the object?

Sample observations might include: green coloring, flat leaves, tree branching patterns, circular patterns in flowers, color in flowers, etc.

5. Students will report on observations orally, in writing, or by drawing.

EXTENDED ACTIVITY:

Have students return to classroom to try to replicate one of the patterns they observed by using graph paper, geoboards, attribute blocks, tangrams, pattern blocks, tiles, or other geometric shapes.

Students can create their patterns and share their products.

Teachers can take snapshots of the resulting patterns.

LESSON 8: NATURE'S ART

MATERIALS:
- construction paper (enough for each child)
- paper sack (one per child)
- Elmer's glue

ACTIVITIES:

1. Inform students that they will be creating a piece of art using only natural products. No man-made materials can be used other than the construction paper each child will be given.
2. Take students on school grounds, in a field, or in the woods to collect natural items. Tell them not to destroy living things, and to collect only those items which have fallen naturally. Students may use the paper sacks to collect their findings.
3. Upon returning to the classroom, tell students they are to create a piece of artwork using only the materials in their bags. Students may use the natural items to rub on their construction paper for color, or to attach directly to create their products.
4. Students will share their artwork, as well as the materials they used to create them.

EXTENDED ACTIVITY:

Write Haiku or other forms of poetry to accompany the artwork created.

LESSON 9: THE WEB OF LIFE

MATERIALS:
- One large piece of mural paper
- Crayons, colored pencils
- Water colors, or tempra paints
- Paint brushes
- Old magazines to cut up
- Scissors
- Glue

ACTIVITIES:

1. Ask each student to select a particularly interesting forest animal, mammal, bird, or reptile.
2. Ask the student to collect as much information as possible, attempting to respond to each of these questions:
   a. Where does the animal live?
   b. Why does it live there?
   c. What must it have available in order to live successfully? (habitat requirements)
   d. What does it prey upon?
   e. How much does it eat?
   f. What shelter does it require?
   g. Where does it perch, hibernate, breed, and sleep?
   h. Does it live on the ground, in trees, at the edge of the forest, or in the forest?
   i. Where does it get its water?
   j. Does it migrate? If so, when and where?
   k. What animals prey on it?
   l. What animals does it live with?
   m. What plants does it live with?
   n. How does the animal influence its environment?
3. Students will draw the forest ecosystem, or the background for their class mural. They may use pictures cut from magazines, or their own drawings to represent the animals they have learned about.
4. Students should have an appropriate placing for their animals on the mural. (In its natural habitat)
5. Students will share their drawings and findings. Some possible discussion questions are:
   a. List 5 facts that you learned about your animal. What did you discover about the animal that surprised you the most?
   b. Why did you select the species you did? Have you ever seen the animal you selected before?
   c. Would you know where and when to look for it? Did you know before you studied it?
   d. Is it a member of an endangered species? If so, what reasons are there for its being endangered? Is anything being done to help or harm it?

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EXTENDED ACTIVITIES:

Use the animals in the mural for teaching the food cycle. Have students place a push pin or tack next to each animal. Use yarn to connect to each animal to the other animals and plants with which it interacts. (ex. It eats _____, is eaten by _____, needs for habitat _____)

Play the game, "What's my animal?" The person who is "it" can answer only "yes" or "no" questions. Students try to guess the animal by asking appropriate questions. The winner is the next one to be "it."

LESSON 10: NATURE'S FUN AND GAMES

MATERIALS:
- String
- Glue
- Colored pens and pencils
- Assorted empty food boxes and cartons
- Rubber bands

ACTIVITIES:

1. Students will make musical instruments using natural items gathered from school grounds, field, and woods. (This can be assigned for homework from the previous class. Students can also be asked to collect empty food containers and shoe boxes from home.)
2. Allow students the opportunity to assemble musical instruments from the given materials.
3. Students will demonstrate the sound their instrument makes.
4. Students will create a song about nature and accompany it with the sounds from their instruments. The teacher can record the musical piece.

LESSON 11: MORE FUN AND GAMES

MATERIALS: . natural items collected from fields, school yard, or wooded area
. Pencil and paper (enough for each child)

ACTIVITIES:

1. Students should collect stones, sticks, and other natural objects. (Some of these might be saved from the previous lessons.)
2. Using the objects, students will work in groups to create a game for 2-4 players. The rules should be written down on paper and shared with the class.
3. Students can rotate to the different games, so that they can try all of them.

LESSON 12: OUTDOOR ETIQUETTE

MATERIALS:
- Black felt-tipped markers
- Pencils
- White unlined paper (8-1/2 x 11)

ACTIVITIES:

1. Initiate group discussion regarding proper behavior in wildlife and natural park settings.
2. Generate a class list of brainstormed ideas for rules of behavior outdoors. (examples: Be careful not to litter, don't carve or abuse any living trees, be careful with fire, stay on the marked trail, respect all wildlife.
3. Ask each student to choose 1-2 statements and have them draw an outlined full-page illustration, with the rule written on the bottom.
4. Choose one student to design a front and back cover for the class book.
5. Duplicate all student pages, collate, and staple together to make coloring books.
6. Students will color their books and make available to other classes, or take home for themselves.

STUDENT EVALUATION OF UNIT

1. List 5 things that you learned during this unit.

    1.

    2.

    3.

    4.

    5.

2. Which activity was your favorite?

3. Why was this activity your favorite?

4. What was something that you wanted to do, that we did not make time for?

5. What changes can be made to make this unit more interesting to you?

6. How would you rate your work during this unit? Please circle the phrase that best describes it.

    1. I tried my hardest and I did a good job.

    2. I did an okay job, but could have done better.

    3. I really goofed-off and did not learn very much.

7. Overall, this unit was really _____. Circle one phrase.

    1. This unit was fun and interesting. I want to learn more about the outdoors.

    2. This was an okay unit.

    3. I did not enjoy this unit.